



Emergency  
Management  
Program  
Follow-up Review\_  
at the

# Miamisburg Environmental Management Project



November 1999

**Office of  
Independent  
Oversight and  
Performance  
Assurance**

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## Abbreviations Used in This Report

<b>BWO</b>	<b>Babcock &amp; Wilcox of Ohio, Inc.</b>
<b>DOE</b>	<b>U.S. Department of Energy</b>
<b>EAL</b>	<b>Emergency Action Level</b>
<b>EOC</b>	<b>Emergency Operations Center</b>
<b>MEMP</b>	<b>Miamisburg Environmental Management Project</b>
<b>MMCIC</b>	<b>Miamisburg Mound Community Improvement Corporation</b>
<b>OH</b>	<b>Department of Energy Ohio Field Office</b>

# OVERSIGHT

# Executive Summary

<b>EVALUATION:</b>	Independent Oversight Follow-up Review of the MEMP Emergency Management Program
<b>SITE:</b>	Miamisburg, Ohio
<b>DATE:</b>	October 1999

## Scope

The U.S. Department of Energy (DOE) Office of Emergency Management Oversight, within the Office of Independent Oversight and Performance Assurance, conducted a follow-up review of the emergency management program for the Miamisburg Environmental Management Project (MEMP) in October 1999. The purpose of this review was to determine the status of corrective actions taken to address program element deficiencies identified during the 1998 DOE Office of Oversight integrated safety management evaluation as needing significant management attention. The review examined additional actions taken by DOE and the site operating contractor, Babcock & Wilcox of Ohio, Inc. (BWO), to correct weaknesses identified by internal assessments of the MEMP emergency management program. The review also focused on actions taken by DOE and BWO to plan and prepare for transition of site emergency response services to the city of Miamisburg and to ensure continued protection for the tenants of DOE-leased facilities until such facilities are completely relinquished to the local community.

## Background

The MEMP emergency management program was one of several environment, safety, and health disciplines reviewed during the Office of Oversight integrated safety management evaluation

conducted from May through July 1998. The 1998 review found that although the site was taking aggressive actions to reduce hazardous material inventories and to conduct comprehensive building-by-building surveys to identify and characterize legacy chemical hazards, the existing emergency management system was not commensurate with the level of hazard present at the site and warranted significant management attention. Programmatic weaknesses were identified in the areas of hazards assessments, emergency action levels, protective actions, categorization and classification, and notification of emergencies. Partly as a result of these program weaknesses, initial responders for MEMP emergencies were not able to promptly and correctly categorize and classify an emergency, perform required notifications, and formulate and implement worker and public protective actions. In addition, significant weaknesses in the DOE and BWO drill, exercise, assessment, and corrective action management programs precluded DOE and BWO from self-identifying these weaknesses, determining the impact of deficiencies in other site programs on emergency response capability, and implementing the necessary corrective actions in response to deficiencies identified by both internal and external organizations.

Since the 1998 evaluation, significant reductions in the site's inventory and use of radiological and chemical materials have continued. These actions support DOE's plan to complete site cleanup and to transfer the site and any remaining facilities to the local community by the end of fiscal year 2003. As part of this transition process, BWO is planning to transfer responsibility for all site emergency response services, such as fire fighting, rescue, medical, and hazardous material response, to the city of Miamisburg by the end of fiscal year 2001.

## Results

DOE and BWO have devoted significant management attention and resources to improving the MEMP emergency management program. These actions have resulted in major programmatic improvements during the past year. Following the

1998 Office of Oversight evaluation, BWO established an Emergency Management Program Improvement Plan. In preparing this plan, BWO critically re-examined the intent of the 1997 Secretarial directives on emergency management and a 1997 assessment of the BWO emergency management program that was conducted by the DOE Ohio Field Office (OH) Office of Compliance and Support. The improvement plan included formal corrective actions and completion milestones for addressing the deficiencies and mandates in these documents and in the Office of Oversight evaluation report. BWO senior management fully supported the improvement plan, including the provision of funding to support the needed improvements. DOE monitored progress on the corrective actions and ensured that completion of the improvement plan through contract performance measures was tied to financial incentives. As a result, DOE and BWO have addressed all of the weaknesses and requirements identified in the source documents, and all of the corrective actions have been completed. DOE and BWO have also completed numerous internal and external assessments in the past year to gauge their progress in improving the emergency management program. These assessments were generally comprehensive and critical, and resulted in important program upgrades in areas such as medical support and program integration and administration. However, the continuing planning and performance weaknesses outlined below indicate that some of the completed corrective actions were not effective and that subsequent self-assessment activities did not identify these vulnerabilities.

In addition to the improvements stemming from corrective actions, the evaluation team also identified noteworthy efforts in the areas of offsite response interfaces and interfaces with tenants of DOE-leased facilities. DOE and BWO have been highly proactive in communicating and coordinating with Miamisburg city officials and offsite medical, fire, and law-enforcement support organizations to ensure an effective response to a MEMP emergency, and to facilitate a smooth transition of existing DOE assets to the community in the next four years. These initiatives could serve as a model for other DOE sites that are considering commercialization of DOE-owned space or preparing for site closure (see page 3).

Despite these widespread and major improvements, the site's ability to carry out an effective emergency response is hindered by a few fundamental programmatic weaknesses. The responsibilities and

expectations for the MEMP incident commanders, who assumed the role of initial response decision-maker in October 1998, have not been adequately defined, communicated, and practiced to ensure that these individuals can promptly and correctly execute the duties of emergency classification, notification, and formulation of worker and public protective actions. Although the applicable procedures were revised, emergency response personnel were trained, and numerous drills were conducted to test these increased performance expectations and responsibilities, the incident commanders are still not adequately prepared to carry out the time-urgent requirements of an emergency before the MEMP Emergency Operations Center is staffed and activated. The existing procedures, checklists, and implementing guidance to support this decision-making are incomplete and are not adequately addressed by the emergency services training program. In addition, the existing hazards assessments, consequence analyses, and emergency action levels do not fully reflect the significant changes in site hazardous material inventories that have occurred in the past 18 months, and there is no established mechanism for line managers to inform emergency services personnel that such changes have occurred. As a result, there are several emergency action levels for facility release scenarios that could result in a General Emergency classification even though the material presumed to be at risk is no longer present in the facility. A declaration of a General Emergency based upon these action levels could generate unwarranted public concern and could place workers and the public at risk in the event that inappropriate protective actions, such as evacuation, are recommended and implemented. Finally, at the time of this evaluation, OH had not established adequate provisions for ensuring that DOE remains apprised of the quantities of hazardous materials being used by tenants in DOE-leased facilities. This information is critical for ensuring the adequacy of existing site emergency preparedness and response plans and procedures.

## Conclusions

The significant programmatic improvements that DOE and BWO have achieved since July 1998 provide a solid foundation for the MEMP emergency management program and have positioned the site well for the eventual transfer to the community. The aggressive DOE and BWO feedback and improvement programs have ensured that all of the issues identified



by the previous Office of Oversight evaluation and the 1997 Secretarial directives on emergency management have been addressed, analyzed, and, with a few important exceptions, corrected. Plans to continue this feedback and improvement process have been established, with greater focus on potentially weak areas. The ongoing plans and activities by DOE and BWO in the areas of offsite responder and non-DOE tenant interfaces could serve as models for other DOE sites undergoing similar transitions. BWO has also made noteworthy progress in better integrating medical resources with site activities and in upgrading emergency response equipment.

Despite these improvements, the MEMP emergency preparedness and response capability is diminished by inadequate plans, preparation, and proficiency of the initial decision-makers to effectively carry out their responsibilities for emergency classification, notifications, and formulation of protective

actions. In particular, incident commanders did not understand their responsibilities nor were they able to formulate and implement worker and public protective action during hypothetical accident scenarios presented during this evaluation. This deficiency is compounded by the fact that the site hazards assessments and emergency action levels have not kept pace with the major reductions in site hazardous material inventories over the past year. No mechanism has been established for either BWO facility managers or tenants of DOE-leased facilities to communicate changes in such inventories to emergency services personnel for appropriate consideration and analysis. While these deficiencies are significant, if the current level of DOE and BWO management commitment and program involvement continues, the weaknesses identified in this report should be promptly and effectively addressed and corrected.

#### **POSITIVE ATTRIBUTES OF THE MEMP COMMERCIALIZATION AND SITE CLOSURE PROCESS**

- The Miamisburg Mound Community Improvement Corporation (MMCIC) general purpose lease that is applicable to all sublessees includes requirements for evacuation, accountability, and emergency reporting procedures. MMCIC has promulgated its policy, expectations, and requirements for building evacuation and accountability reporting to tenants in a standard operating procedure.
- OH and DOE-MEMP established a formally documented technical basis for their decision to treat tenants as co-located workers. This was accomplished in partnership with the Environmental Protection Agency Region V Office to ensure a common understanding of requirements applicable to companies leasing DOE property.
- OH and DOE-MEMP have developed a draft sublease/protectiveness determination procedure in accordance with the August 1999 guidance from DOE Headquarters. When fully implemented, this procedure will provide controls for formal reviews of proposed lessee activities, both before the lease is approved and after the lessee has begun work on the site.
- BWO is actively planning and preparing for the transition of all site emergency response services to the city of Miamisburg by October 2001. Until this transition is complete, the site and the city are working under formal and comprehensive mutual response guidelines that outline the respective roles and responsibilities for responding to a fire, emergency medical, or hazardous material incident.

## FINDINGS

As directed by the Office of the Secretary of Energy, DOE has established a process for recording, tracking, addressing, and resolving findings identified by the Office of Independent Oversight as defined by the *Protocols for Responding to Office of Independent Oversight and Performance Assurance Appraisal Reports* (August 1999). The DOE Assistant Secretary for Environmental Management, as the lead program secretarial officer, and the DOE field elements (OH and DOE-MEMP), as the cognizant line managers, are required to develop a corrective action plan to address the findings identified in this report.

1. BWO has not established a consistent and technically sound process for developing emergency preparedness hazards assessments and associated consequence analyses for MEMP facilities and activities.
2. BWO incident commanders lack the necessary plans, procedures, and implementing guidance for, and are not proficient in, assessing emergency event conditions and formulating worker and public protective actions and recommendations.
3. DOE-MEMP has not established a process that requires DOE to be informed before significant changes occur in hazardous material quantities used or stored by lessees of DOE-owned facilities.

The issues related to the MEMP emergency management program that were identified during the 1998 Office of Oversight evaluation and that currently exist in the department's Corrective Action Tracking System are provided in the box below. The first issue description is accompanied in the tracking system by

six DOE-MEMP and nine BWO action items, all of which are reported to be complete. The second issue is accompanied by five DOE-MEMP action items, two of which are reported to be complete. None of the corrective actions has yet been verified by line management.

## OPEN LEGACY ISSUE

- DOE-MEMP and BWO have not adequately implemented the requirements of the Mound Emergency Plan or the DOE Emergency Management Order. As implemented, the site emergency management program does not provide reasonable assurance that the site can promptly perform accurate accident recognition, categorization/classification, and notifications to offsite agencies and provide protective action recommendations to protect workers, the public, and the environment. Additionally, senior site management has not provided sufficient attention, emphasis, and leadership to this program commensurate with the Secretarial initiative after the explosion at Hanford. This has delayed the necessary improvements to the site emergency management program.
- DOE has not fully developed policy and implementing guidance pertaining to the leasing of space to private companies and public workers at facilities such as MEMP. Additionally, OH authorized leasing of MEMP facilities prior to clearly identifying hazards and controls, fully assessing the potential impact of accidental releases of radioactivity on these lessees, or developing an effective emergency management program involving lessees.

## 1.0 Introduction

**The Office of Oversight conducted a follow-up review of the emergency management program at MEMP.**

The U.S. Department of Energy (DOE) Office of Emergency Management Oversight, within the Office of Independent Oversight and Performance Assurance, conducted a follow-up review of the emergency management program for the Miamisburg Environmental Management Project (MEMP) in October 1999. The purpose of the review was to determine the status of actions taken to correct emergency management program deficiencies that were identified during the May through July 1998 integrated safety management evaluation conducted by the DOE Office of Oversight. This 1999 review focused on corrective actions related to weaknesses in initial emergency response decision-making; hazards assessments; emergency actions levels (EALs); protective action formulation; assessment and corrective action management programs; training, drill, and exercise programs; and emergency planning and preparedness requirements associated with site facilities that are leased to private companies by the DOE. This review also examined the capabilities and integration of onsite and offsite emergency response resources and planning for complete transition of emergency response capability to non-DOE entities by October 2001.

The DOE Headquarters Office of Environmental Management is the lead program secretarial office for the DOE Ohio Field Office (OH). The DOE Office of Nuclear Energy, Science, and Technology has programmatic responsibilities for radioisotopic thermoelectric generator production at the site. This mission is expected to continue at the Miamisburg site for the foreseeable future and after the remainder of the site has been turned over to the community. OH

manages activities at the MEMP and is located in the same office building as the DOE-MEMP office. DOE-MEMP provides day-to-day safety management direction to the site. In the area of emergency management, the OH Office of Compliance and Support emergency management specialist provides direct support to DOE-MEMP on a part-time basis. The site cleanup and closure mission is managed by Babcock & Wilcox of Ohio, Inc. (BWO) and carried out by four primary subcontractor companies.


**A 1998 evaluation found that management's lack of attention seriously compromised the site's ability to protect workers and the public in an emergency.**

The 1998 Office of Oversight evaluation concluded that significant DOE and BWO senior management attention was needed to strengthen the site's emergency management program and response capabilities. At the time of that evaluation, the site was taking aggressive action to reduce radioactive material inventories and to characterize and remove legacy chemical hazards. However, the lack of a current sitewide hazards assessment, weaknesses in EALs, and the inability of BWO crisis managers to promptly and correctly categorize and classify an emergency using existing plans and procedures did not provide assurance that workers and the public would be adequately protected in an emergency. Additional weaknesses were identified in responding to the 1997 Secretarial directives on emergency management; conducting and evaluating training, drills, and exercises; and correcting previously identified deficiencies. This further compromised the existing response capability and represented missed opportunities to ensure or to upgrade program effectiveness.

## 2.0 Results

The evaluation addresses emergency management elements included in DOE Order 151.1, *Comprehensive Emergency Management System*, and corrective actions identified in response to the 1998 Office of Oversight integrated safety management evaluation. Each of the following sections includes key observations, conclusions, and a rating of Satisfactory, Marginal, or Unsatisfactory. These ratings are used to communicate the degree to which corrective actions are being effectively implemented and to provide a perspective on where line management attention is warranted. Appendix B provides a more detailed explanation of the rating system.

### Feedback and Continuous Improvement Process



**There has been significant DOE and BWO management commitment toward improving the MEMP emergency management program since 1998.**

The 1998 Office of Oversight integrated safety management evaluation identified several weaknesses related to the MEMP feedback and improvement process. That report indicated that critical assessments of the emergency management program and site response capabilities were not being performed, the existing drill and exercise program was not sufficient to test emergency responder decision-making capabilities, DOE and BWO had not corrected longstanding and significant weaknesses in emergency management and preparedness, and DOE and BWO responses to the 1997 Secretarial directives in emergency management were inadequate. In part as a result of these weaknesses, MEMP crisis managers were not able to perform their required time-urgent duties to protect workers, the public, and the environment in the event of an emergency. This follow-up review determined that there has been


significant DOE and BWO management commitment toward improving the MEMP emergency management program and developing an effective feedback and improvement process. However, additional refinement of this feedback and improvement process is necessary to ensure that completed corrective actions achieve the intended results and that evaluation activities provide meaningful information on responder performance.



**BWO developed a comprehensive program improvement plan to address program weaknesses.**

The notable level of DOE and BWO commitment and effort is exemplified by the high degree of responsiveness to the concerns raised during the 1998 Office of Oversight evaluation. In August 1998, BWO developed an Emergency Management Program Improvement Plan to capture and collectively address the emergency management issues and mandates identified in the August 1997 Secretarial directives, a September 1997 OH Office of Compliance and Support assessment, and the 1998 Office of Oversight evaluation. This plan is important in that it included a re-evaluation of information that had been previously reviewed by BWO but that did not result in needed program improvements. The plan addressed all of the weaknesses identified by these documents and, at the time of this evaluation, all of the corrective actions had been completed. Reviewers from the BWO quality assurance office independently verified completion and closure of the corrective actions identified in the improvement plan. In addition to these actions, BWO created and staffed the position of Emergency Services Manager in January 1999 to elevate the visibility of the program and to provide program management at the same level as other support organizations (such as radiation protection and industrial safety and hygiene).



 **OH has established performance measures for improving the BWO program that are tied to financial incentives.**

DOE-MEMP established a separate set of DOE-specific corrective actions in response to the 1998 Office of Oversight evaluation. These actions were formally tracked and, with one exception, have been completed. Each corrective action is supported by a closure package that was also reviewed by an independent third party. DOE managers took additional actions to improve their awareness and monitoring of the MEMP program. Shortly after the 1998 evaluation, the OH emergency management specialist was detailed to DOE-MEMP for a 120-day period to facilitate more immediate oversight of BWO's corrective actions, and has since spent a significant percentage of his time directly supporting DOE-MEMP in the emergency management area. OH also established emergency management performance expectations with a contract award fee measure. These performance plans included expectations such as ensuring that all emergency response organization personnel completed the required position-specific training, and implementing and closing 100 percent of the corrective actions to findings or concerns derived from internal and external evaluations, assessments, and exercises. The performance plan for October 1999 through September 2000 provides similar performance measures related to the MEMP emergency management program.

In addition to the corrective action and improvement plans, OH, DOE-MEMP, and BWO have conducted a number of in-depth assessments related to emergency management over the past 12 months. These include a third-party emergency management program assessment conducted by an independent support contractor commissioned by BWO, a BWO assessment of fire services, an emergency management assessment performed by the BWO quality assurance office, the annual OH Office of Compliance and Support assessment that covered 12 of 14 emergency management program elements, and several surveillances conducted by a team from DOE-MEMP and the OH Office of Compliance and Support. These assessments have appropriately evaluated areas such as training and drills, notification requirements, and the emergency medical program. BWO has addressed and closed all of the associated corrective actions for these assessments using a disciplined process that includes development and retention of documentation supporting corrective action completion. The emergency services organization

has also completed periodic self-assessments as required by BWO internal procedures. However, these self-assessments are not based upon established evaluation criteria and, for fiscal year 1999, did not focus on potentially weak areas or activities that would provide the most insight into emergency responder preparedness.

Although these assessments have been critical and, collectively, have covered a wide range of program elements and objectives, they have not been sufficient to identify important weaknesses in emergency planning, preparedness, and training. At MEMP, emergency response drills and exercises are intended to demonstrate the effectiveness of the procedures, resources, and training provided for emergency responders. However, as discussed later in this report, the drill and exercise program is not providing sufficient feedback to validate and verify the effectiveness of the corrective actions that have been implemented.

In conclusion, the Independent Oversight team found that DOE and BWO management have achieved noteworthy improvements in the site's emergency response capabilities through their response to the findings of the 1998 Office of Oversight evaluation and their own assessment activities. Corrective actions were well conceived, and significant management attention has been directed to their completion. Plans for continuing the feedback and improvement process through assessments, drills, and DOE performance measures have been established or are being developed for the coming year. However, as discussed later in this report, a few important deficiencies have not been identified by the existing feedback and improvement process, and the current drill and exercise program has not served to validate that completed corrective actions have been effective.


**Rating:** Satisfactory 

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## **Hazards Surveys, Hazards Assessments, and Emergency Action Levels**


The 1998 evaluation concluded that the absence of current, sitewide hazards assessments impacted the adequacy of EALs and the ability of emergency responders to effectively categorize and classify emergencies, perform required notifications, and protect potentially affected populations. This follow-up review determined that the BWO hazards screening document, hazards assessments, and associated EALs have been reviewed and upgraded. However, as a result of weaknesses in the process by which hazards were

identified, screened, and analyzed, the consequence analysis results are not fully accurate or complete and may not provide the planning basis necessary to protect site workers and the public.



**The hazards screening analysis is not an effective planning tool for emergency management responders or support staff.**

In early 1999, BWO retained the services of a support contractor to review and update the 1998 hazards screening and assessment documents. Despite this effort, the June 1999 hazards screening document still lacks many of the attributes of a hazards survey that are required by DOE Order 151.1. The screening document lists the facilities that contain hazardous materials and indicates whether the facility was “screened out” or retained for further assessment. However, the tables in this document do not describe the emergency conditions that may result in health, safety, or environmental impacts, and do not summarize the applicable planning and preparedness needs as required. As a result, the screening analysis is not an effective planning tool for either emergency responders or support staff. The screening document also identifies several concerns, such as the potential for release of hazardous materials via a waterborne pathway and the presence of seven large fuel tanks on site. Because these concerns were not evaluated in the screening document or any of the facility hazards assessments, the potential impact of these concerns related to emergency planning and preparedness could not be readily determined.




**There are significant discrepancies between the quantities of hazardous materials analyzed in the hazards assessments and the actual or estimated quantities on site.**

Hazards assessments have been completed for the seven MEMP facilities identified as having quantities of hazardous materials in excess of applicable threshold quantities. Despite having been updated following the 1998 Office of Oversight evaluation and again in June 1999, there are significant discrepancies between the quantities of hazardous materials analyzed in the hazards assessments and the actual or estimated quantities of material on site. This is due, in part, to the fact that a technical basis defining the source(s) of information to be used to accurately and consistently determine the

quantities of hazardous material at risk was not established. In many cases, the quantities of materials allowed by the facility safety basis documentation (e.g., basis for interim operations) were used, while in other cases, facility- or activity-specific administrative limits were used. Readily available, current inventories of chemical and radiological materials were not used for the postulated release scenarios for MEMP facilities. These inventory quantities are significantly smaller than the large quantities that are typically identified in safety basis documents to bound all conceivable future operations and are not actually expected to be used or stored. In some cases, the quantities used in the hazards assessments are more than ten times greater than those actually present in the facilities. The consequence of this overly conservative analysis is that workers and the public may be unnecessarily alarmed for a relatively inconsequential event and may be subject to additional risks if unnecessary protective actions and/or recommendations, such as evacuation, are implemented.

BWO also lacks a mechanism to ensure that emergency planners are notified in advance of significant changes in hazardous material inventories, processes, and activities in MEMP facilities so that the hazards assessments can be modified accordingly. As a result, the emergency services staff was not notified or made aware that most of the accountable radiological material (i.e., not including residual material in piping, ducts, etc.) in two facilities had been removed approximately one year ago. Thus, these changes are not reflected in the June 1999 hazards assessment documents. Similarly, and as discussed later in this report, the DOE general purpose contract with the Miamisburg Mound Community Improvement Corporation (MMCIC), which manages the leasing of DOE-owned space at the site, and associated subleases do not require the tenant organizations to inform DOE or BWO of the quantity of hazardous materials being used or stored in the leased facilities or when the applicable planning threshold might be approached or exceeded.



**The hazards assessments and hazardous material inventories don't account for some hazardous materials that could be released in an accident.**

The hazards assessments and hazardous material inventories also do not account for some hazardous materials that could be released in an accident. For example, the facility safety basis documentation for two MEMP facilities that historically were considered to be among the most hazardous did not include the correct quantities of hazardous materials contained in equipment.

During recent decommissioning activities, facility personnel discovered that a vacuum system contained significantly more mercury than had been analyzed in the safety basis or the hazards assessment. A subsequent analysis indicated that the amount of mercury in the facility was about ten times greater than the quantity that was analyzed. Another weakness in the hazards assessments is that only the radiological effects of the large quantities of depleted uranium on site were considered without similar consideration of its toxicological effects. The chemical toxicity of uranium overrides the radiological consequences during the early phases of off-normal events. However, these effects were not evaluated and a technical justification for not performing this analysis has not been documented.

**FINDING:** BWO has not established a consistent and technically sound process for developing emergency preparedness hazards assessments and associated consequences analyses for MEMP facilities and activities.

Since the 1998 evaluation, BWO has established thresholds for categorizing operational emergencies that do not require further classification and for non-emergency significant events. These thresholds are in addition to the EALs that previously existed for classifying operational emergencies involving hazardous materials. These three sets of “action levels” are contained in tables in the Mound Site Emergency Plan, commonly referred to as Response Procedure 1. Although the development and revision of these action levels represents progress, the evaluation team identified a number of weaknesses in the content of the action levels:

- Thresholds for declaring an Operational Emergency not requiring further classification were not modified to make them site-specific and, thus, some events, such as a mass casualty incident, could result in either an Alert emergency declaration or an Operational Emergency not requiring further classification.
- The tables do not identify any malevolent acts that could generate an Operational Emergency requiring classification or provide any guidance for applying the existing EALs for classifiable emergencies to potential malevolent acts.
- Some EALs and their qualifying criteria are not included in the tables, such as the protective action criterion for declaring a General Emergency.
- The tables do not include discretionary thresholds.
- There are no EALs for onsite transportation-related events or guidance for classifying such events using

alternative resources, such as the North American Emergency Response Guidebook.

**Guidance for formulating and implementing protective actions is lacking.**

The utility of the EAL tables is also limited by the absence of an implementing procedure for applying the EALs as decision-making tools and using them to formulate protective actions based on event conditions. The EALs include default protective actions where applicable, but in some cases, recommended protective actions for the offsite population are incorrect and cannot be implemented by initial decision-makers. For example, evacuation is inappropriately recommended for persons in the direct, downwind path of a dispersion plume resulting from a fire involving non-penetrating radioactive materials. There is also no guidance to ensure that factors, such as the time of plume arrival and the nature of the release (i.e., instantaneous vs. continuous) are considered in protective action decision-making. Offsite protective action recommendations also lack guidance related to the required actions for areas away from the plume centerline.

BWO has completed a comprehensive analysis of onsite transportation and handling events that is documented in a report entitled *Safety Documentation for Onsite Transportation and Handling of Radioactive and Hazardous Materials*. This safety analysis includes postulated off-normal events and analysis of their consequences. Since this document identifies the range of possible transportation and handling accidents that might result in a hazardous material release, it could serve as an effective foundation for a transportation hazards assessment. However, the BWO emergency services staff has not incorporated the results of these analyses into the sitewide emergency management system. Although the analyses indicated the potential for several significant events, no further evaluation was performed and no associated EALs were developed. The document also was not available in the emergency operations center (EOC) for use as a response tool.


In summary, hazards assessments have been completed for MEMP facilities requiring such assessments, but adequate mechanisms have not been implemented to sustain the assessments as accurate, living documents that reflect current site hazards. Hazardous material quantities and characteristics used in assessment analyses were not reflective of actual or

expected inventories or hazards. Therefore, in some cases the analysis results did not in all cases provide a sound foundation upon which other elements of the emergency management system could be structured. Although progress has been made in improving EALs and their related default protective actions, further effort is required to provide users with accurate and objective decision-making resources that can be readily applied under circumstances requiring an incident response.

**Rating:** Marginal 

## Emergency Responder Performance and Preparation


The 1998 Office of Oversight evaluation identified that the established emergency response process did not promote timely emergency classification and notification and that the initial emergency responders could not adequately execute these responsibilities. Inadequate emergency response training and the lack of challenging drills and exercises to evaluate emergency decision-making capabilities contributed to this lack of proficiency. This follow-up review found that since the responsibility and authority for initial decision-making was transferred to the primary on-scene responder, the ability of initial decision-makers to categorize/classify emergencies and perform required notifications in a timely manner has improved. However, important performance deficiencies remain, due in part to continued weaknesses in the procedures, implementing guidance, checklists, and training provided to assist these decision-makers in fulfilling their time-urgent response duties.

 **The ability of initial decision-makers to categorize and classify emergencies has improved since this responsibility was transferred to the primary on-scene responder.**

In October 1998, emergency response procedures and responder expectations were modified to facilitate timely decision-making for occasions when the EOC could not be immediately staffed and activated. The roles, responsibilities, and authorities for initial incident assessment, and emergency classification, notification, and formulation of protective actions were assigned to individuals in positions that are on site 24 hours per day and who can quickly deploy to an incident scene. In

responding to an event, the initial incident commander is the senior fire protection officer or, if the event is safeguards- or security-related, the senior protective force supervisor. Once the EOC is activated, certain decision-making roles transfer to the crisis manager.

As part of this Independent Oversight evaluation, the evaluation team developed a few hypothetical scenarios for accidents that could reasonably occur at the MEMP site. These scenarios were then presented to four MEMP incident commanders—two from the fire department and two from the protective services staff—to test their ability to formulate and implement the time-urgent decisions that are required in the initial stages of a response effort. The incident commanders were encouraged to use all reference materials and resources that would normally be available to them in responding to an incident or emergency. An individual from the MEMP emergency services staff was present at each performance test to ensure clear communications using site-specific terminology and to help validate the observations of the evaluation team.

 **MEMP incident commanders do not yet understand their roles and responsibilities as the initial responder and sole decision-maker.**

The results of these performance tests indicated that the MEMP incident commanders do not yet understand the roles and responsibilities associated with being the site's initial responder and sole decision-maker during the early stages of an event. For example, none of the four incident commanders could define the decision-making tasks that they would need to complete in the event that EOC activation is not immediate. Contributing to this situation is the absence of an implementing procedure that specifically defines the incident commander duties of assessing initial event conditions and determining the potential impact on nearby populations. The BWO emergency services staff developed an informal list of response activities to serve as a memory aid and conducted classroom training on how to use the list. However, the list is incomplete and was not used by any of the four incident commanders evaluated.

More critically, the four incident commanders did not demonstrate during the performance tests the ability to formulate and implement protective actions for site personnel and the public. For example, neither fire department incident commander implemented appropriate onsite protective actions outside the




immediate impact area for a significant fire involving the release of hazardous materials, and one of them did not formulate any offsite protective action recommendations following declaration of a General Emergency. In addition, none of the four incident commanders considered modifying the route for responding personnel to avoid exposure to the hazardous material plume. Contributing to this performance weakness is the absence of readily available, real-time meteorological information during non-duty hours. In addition, for the postulated scenarios, the fire department incident commanders indicated that they would send responders into the facility even though a backup rescue team was not available. This action is inconsistent with DOE Order 151.1 requirements, the Mound Fire Protection Baseline Needs Assessment, and the response guidelines mutually agreed to by the MEMP and city of Miamisburg fire departments. The collective result of these deficiencies is that adequate protection for emergency responders, site personnel, and the public from the potential consequences of a hazardous material release from the site cannot be assured.

**FINDING:** BWO incident commanders lack the necessary plans, procedures, and implementing guidance for, and are not proficient in, assessing emergency event conditions and formulating worker and public protective actions and recommendations.

The ability of the incident commanders to categorize and classify emergencies and perform required notifications has improved since the BWO crisis managers were evaluated relative to these functions during the 1998 evaluation. In part, this is due to modifications in the emergency response organization training, drill, and exercise program that were made to ensure that the incident commanders, crisis managers, and other responders were familiar with and could demonstrate their respective roles and decision-making responsibilities. For example, the fiscal year 1999 drill and exercise schedule represented a significant increase over the previous year's level of activity, and included two exercises involving offsite responders. One of these exercises was specifically designed to test the incident command coordination capabilities (or unified command structure) between the MEMP and city of Miamisburg fire departments. Drill activities included demonstrations of sitewide building evacuations, responses to facility-related off-normal events, and numerous activations of the paging system for EOC personnel. An exercise designed to

prepare for the Year 2000 (Y2K) rollover using the date 9/9/99 was also conducted. Nevertheless, the training, drill, and exercise program enhancements have not been fully effective in ensuring emergency response organization readiness.



**Drills and exercises don't critically assess the ability of incident commanders to carry out their duties between event initiation and EOC activation.**

A review of several drill and exercise packages indicated that they generally contain the appropriate basic elements of exercise objectives, a scenario description, drill or exercise deficiencies, and opportunities for improvement. However, the drills and exercises conducted to date have not been constructed or executed to critically assess the ability of incident commanders to handle their categorization/classification, notification, and protective action responsibilities during the time span between event initiation and EOC activation. In addition, the site does not systematically identify, document, analyze, and resolve deficiencies for all drills and exercises or consistently use the site corrective action tracking system to capture these deficiencies, as their emergency readiness assurance plan describes. The requirements specified in the emergency plan regarding development, content, and distribution of an After Action report for all emergency response exercises are also not being satisfied. Despite these weaknesses, there is evidence that the drill and exercise program has resulted in program improvements in areas such as equipment availability and response procedure content. With regard to training, the evaluation team noted the training for incident commanders and EOC personnel does not address the fundamentals of meteorology as it relates to hazardous materials dispersion or how to use this information to formulate and implement appropriate protective actions. Finally, there was no clear indication that the drills and exercises had been constructed and scheduled to a master plan in accordance with the MEMP emergency readiness assurance plan, to ensure that over a period of time, all of the response plans, facilities, site personnel, and offsite mutual aid responders are involved in a test of their response capabilities.

The effectiveness of the training, drill, and exercise program is also limited by the nature and utility of the current record-keeping system. The process for tracking

emergency response personnel participation in drills and exercises, which was recently instituted in response to an internal assessment, is cumbersome. As a result, emergency services personnel do not have ready access to the information necessary to plan responder participation in future drills to ensure that their annual proficiency requirements are satisfied. The need to use this process as a planning tool will become increasingly important in the coming year when the reduced number of drills and exercises will provide emergency responders fewer opportunities to participate in performance-based activities. Furthermore, the current system is not being used effectively to ensure that the established training requirements are being met. For example, a review of training records indicated that many of the incident commanders have not attended the Hazmat Incident Command course that is required by the EOC training plan. As was the case in 1998, some emergency responders also have not taken advantage of existing training opportunities. For example, the emergency services staff invited the DOE Office of Nonproliferation and National Security to present a second course on conservative decision-making at MEMP. Attendance at this course was originally mandated by the 1997 Secretarial directives. However, the incident commanders who had assumed responsibility for initial response decision-making in October 1998 were not required to attend the course, and five of the 12 incident commanders, one of whom was a fire services officer, did not attend either of the course presentations.

In conclusion, improvements in the training, drill, and exercise program have increased the readiness of the MEMP emergency response organization. However, these programs are not yet sufficiently rigorous to adequately prepare incident commanders for their increased roles and responsibilities, as indicated by their performance during the tabletop scenarios that were conducted as part of this review. Contributing to the performance deficiencies is a drill and exercise program that has not been effective in identifying weaknesses in the training, preparation, and implementing guidance provided to these individuals. Finally, existing tracking systems do not ensure that emergency response personnel attend all required training and do not facilitate the process for ensuring that all emergency responders maintain their proficiency.

**Rating:** Initial Responder Capability - Unsatisfactory  
Training, Drills, and Exercises - Marginal



## Facilities, Equipment, and Offsite Response Interfaces

The 1998 Office of Oversight evaluation identified deficiencies in fire-fighting equipment and in the testing of fire-fighting systems in accordance with National Fire Protection Association standards. Other internal assessments in late 1998 and early 1999 found that the MEMP Mutual Aid Agreement with the city of Miamisburg was outdated and the MEMP site medical organization wasn't knowledgeable about the hazards assessments for the MEMP site. Results of this follow-up review determined that MEMP has taken a variety of significant actions to correct these programmatic shortcomings.



**BWO has implemented effective corrective actions to address concerns related to fire fighting and rescue response capabilities.**

BWO has implemented effective corrective actions to address both near-term and long-term resource concerns related to fire fighting and rescue response capabilities. In early 1999, the fire services group completed a baseline needs assessment of fire response capabilities for MEMP and a fire services organization staffing assessment. Together these documents provide (1) the baseline for fire protection program equipment planning and purchase, (2) a confirmation of internal staffing requirements, and (3) an analysis of mutual aid support needed from the city of Miamisburg Fire Department. The assessments are appropriately comprehensive and detailed. For example, the baseline needs assessment presents nine credible scenarios that represent the bounding conditions at the MEMP site. Each scenario has established response criteria for the MEMP emergency response teams and defines staffing and equipment requirements for MEMP and the city of Miamisburg Fire Department's responders.

MEMP personnel and offsite responders have also developed and formally documented the "Mound Fire Department/Miamisburg Fire Division Mutual Response Guidelines for Fire, Emergency Medical Service, and Hazardous Material Incidents." This document describes the conditions and procedures to be used to request the dispatch of Miamisburg fire equipment and personnel to an event at MEMP. The agreement specifies the division of roles and responsibilities between MEMP and the Miamisburg Fire Department

for providing emergency medical services for contaminated victims, responding to hazardous material releases, and mitigating structural fires, and delineates the incident command structure and needed fire department resources. The agreement is comprehensive, the commitments are fully supported by both MEMP and the Miamisburg Fire Department, and it has clearly enhanced the working relationship between the city of Miamisburg Fire Department and MEMP. To further foster the relationship and ensure an integrated response, BWO has conducted site orientation and hazards assessment training for members of the Miamisburg Fire Department. Additionally, a city of Miamisburg staff position has been added to the MEMP EOC. In June 1999, an exercise tested the city and site fire departments' unified command structure as outlined in the response guidelines. This particular exercise was also observed by a representative from the Ohio Department of Public Safety, who provided meaningful feedback to the MEMP emergency services staff regarding areas for increased mutual coordination and recommendations for scenarios and participation in future drills and exercises.



**BWO has been actively planning the transition of fire, medical, and hazardous material response services to the city of Miamisburg by October 2001.**

With regard to the longer-term, BWO has begun actively planning the transition of fire, medical, and hazardous materials response services to the city of Miamisburg by October 2001. BWO has identified the existing site resources, defined the level of DOE-managed resources that will remain after the transition, and specified the assumptions about project status that are essential elements of future planning and decision-making. BWO has also identified the key issues that must be addressed and resolved prior to completing the transition and the duties that DOE and/or BWO must continue to perform up until final project closure. A briefing on these transition plans has been presented to both DOE and the city.

BWO has taken corrective actions to rectify previously identified deficiencies in fire fighting and medical equipment and to upgrade the fire protection system testing and inspection program. These actions included obtaining, repairing, and refurbishing an ambulance from another DOE site and, with the assistance of the MEMP Occupational Medical Director,

fully equipping the vehicle to provide basic life-support service. The ambulance was subjected to a rigorous inspection program and received licensing certification from the state of Ohio. The second site ambulance was also upgraded and is now available for backup service. BWO also purchased and equipped a new vehicle to support confined space and other types of rescue, and additional response equipment, such as personal protective clothing and monitoring instruments for detecting hazardous conditions. It is important to note that these purchases were balanced against the planned transition of emergency response services to the city of Miamisburg. BWO has also instituted an annual inspection schedule to ensure that all testing of fire protection systems, including hydrant and piping flow testing, is completed in accordance with established standards. A review of a selected sample of testing and inspection elements from the 1999 schedule indicated that testing and inspection is being completed on schedule and supporting documentation on equipment status is being maintained.




**Actions have been taken to better integrate BWO medical experts into the emergency response organization.**



Actions have been taken to better integrate BWO medical experts into the emergency response organization. For example, BWO medical personnel have attended the same EOC orientation and hazards assessment training that was provided to crisis managers and incident commanders. The Health Services Department has developed a procedure that requires medical staff to participate in facility safety walk-throughs on a quarterly basis with BWO senior management. This activity provides the medical personnel with an opportunity to become familiar with the ongoing demolition and decontamination activities, better understand the functions associated with each job being performed, and recommend improvements in operational functions in the workplace. Results of the walk-throughs are provided to the Occupational Medical Director for further action if warranted. The medical staff is also required to review and sign a master resource schedule on a weekly basis. This schedule provides pertinent information regarding the location of major project labor activities on site, type of work being performed, and names of staff members who will be working on the projects. This allows the medical personnel to be better prepared to respond to a work-related event and to anticipate whether hazardous materials could be involved.



A memorandum of understanding between MEMP and the Kettering Medical Center, which operates the Sycamore Hospital in Miamisburg, is in place. In 1998, BWO medical personnel conducted training for the Sycamore Hospital medical staff to familiarize them with the hazards present at MEMP and the types of medically related emergencies that might occur at the site. Additionally, in August 1998, 33 BWO radiological control technicians, who could be assigned to accompany contaminated patients to the hospital during a MEMP emergency, attended orientation at Sycamore Hospital. This orientation provided information on how the hospital handles contaminated patients, where treatment occurs, and the types of monitoring equipment available.

 **Cooperation and communication between MEMP and mutual aid responders is excellent.**

In conclusion, BWO has taken a number of actions to address programmatic weaknesses in the areas of fire department resources, interfaces with offsite response agencies, and integration of the medical department into emergency response organization operations. BWO has completed detailed analyses of their emergency response capabilities and have used these analyses appropriately to upgrade fire and medical response equipment while also considering the cleanup and closure mission of the site. Well-conceived and developed “response guidelines” have been formally established to define and articulate the respective roles and responsibilities between MEMP and city of Miamisburg Fire Department responders. The ongoing cooperation and communications between site personnel and mutual aid responders and the active involvement of BWO medical and Sycamore Hospital staff in understanding the nature of the hazards present at MEMP collectively demonstrates the outcome of increased management attention in this area.


**Rating:** Facilities and Equipment - Satisfactory   
Offsite Response Interfaces - Satisfactory 

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## **Interfaces with Occupants of DOE-Leased Facilities**

The 1998 Office of Oversight evaluation identified several emergency management and preparedness concerns at the site related to lessees and sublessees

(tenants) of DOE-owned facilities, including whether to consider lessees and tenants as co-located workers or members of the public. Since that time, increased management attention on the part of DOE, BWO, and the MMCIC (the prime lessee) has resolved most of these concerns.

 **Lessees at MEMP are treated as co-located workers, thereby providing them the same degree of preparedness and protection as DOE and BWO workers.**

OH, with input from DOE Headquarters, developed a position paper on commercial businesses leasing space at MEMP that provides the technical basis for the decision to treat lessee employees as co-located workers. The position paper describes the benefits of designating the lessees as co-located workers under the common emergency plan for the site, thereby providing them the same degree of preparedness and protection as for DOE and BWO workers. In developing this paper, OH established a partnering relationship with the U.S. Environmental Protection Agency’s Region 5 Office to recognize a special category of workers for the lessees and tenants at MEMP. DOE-MEMP has also drafted a Sublease/Protectiveness Determination Procedure, in accordance with DOE Headquarters guidance, to provide requirements for the review and approval of new subleases. Although still under development, if implemented as currently conceptualized, the procedure will provide a more formal process for reviewing proposed subleases, including consideration of the potential hazards associated with proposed tenant activities, prior to approval of the sublease as well as subsequent to the arrival of the tenant on site.

The general purpose lease, which is applicable to all sublessees and tenants, requires procedures for evacuation, accountability, emergency reporting, and severe weather warnings that are compatible with MEMP procedures to be incorporated into all lessee and sublessee operations. These procedures have been developed and implemented by MMCIC. In addition, MMCIC provides site-specific information to tenants in an information guide that addresses safety and environmental responsibilities, site restrictions, emergency reporting instructions, information on site emergencies and associated announcements, and important telephone numbers. Each tenant organization maintains a controlled copy of the information guide for use by their employees, and MMCIC provides



revisions to the guide when necessary through a formal document control process. A video containing site-specific information is being developed by MMCIC and should further enhance communications with tenants regarding site-specific hazards and emergency response. Other recent improvements in the DOE/tenant interface included adding an MMCIC representative to the EOC cadre and increasing the level of participation by tenants in emergency drills.



**The DOE was unable to readily obtain complete chemical inventories from MEMP tenants.**

Several of the tenants on site use or store hazardous chemicals, albeit in small quantities. Incomplete knowledge of these hazards and their uses could impact BWO's ability to fully plan and prepare for the range of potential emergencies at MEMP. The general purpose lease requires lessees and tenants to submit material safety data sheets for chemicals that they use or store to the site fire department to aid in developing pre-fire plans, but does not require the quantities of those chemicals to be reported. The information guide provided to the tenants indicates that annual updates and significant changes in the type or quantities of hazardous materials are to be provided. The guide does not describe how or when this requirement is to be

satisfied, and in response to a formal request from DOE to MMCIC, not all of the inventory information was forthcoming. DOE was eventually successful in obtaining this information following a series of negotiations.

**FINDING:** DOE-MEMP has not established a process that requires DOE to be informed before significant changes occur in hazardous material quantities used or stored by lessees of DOE-owned facilities.

In summary, DOE and BWO have made significant progress in implementing the appropriate emergency management elements that are applicable to lessees and tenants. DOE has a documented technical basis for considering lessees and tenants as co-located workers, a representative of the prime lessee has been added as an EOC responder, tenants are being provided sufficient emergency management training, and evacuation and accountability procedures have been implemented. However, DOE stills lacks a formal mechanism for remaining apprised of the hazardous material quantities and activities being used or performed by lessee and tenant organizations, which may result in a hazardous material release.

**Rating:** Not Rated

## 3.0 Conclusions and Overall Rating







This section presents an overall perspective and rating on the current state of the MEMP emergency management program.

OH, DOE-MEMP, and BWO managers have committed the necessary resources and attention toward improving the MEMP emergency management program. These actions have resulted in clearly identifiable program improvements and have been implemented consistent with the consideration of near-term site closure. Despite the overall programmatic progress, the procedural weaknesses and performance deficiencies identified relative to initial response decision-making capability

warrant increased attention to ensure that workers and the public will be protected in an emergency. The technical foundation of the hazards assessments and resulting consequence determinations must also be firmly established to ensure that they support the emergency planning and preparedness of the rapidly changing site conditions.

The overall rating of Marginal and the individual element ratings reflect the current status of the emergency management program.

**Overall Rating:** Marginal 

Ratings by Report Element		
Feedback and Continuous Improvement Process	Satisfactory	
Hazards Surveys, Hazard Assessments, Emergency Action Levels	Marginal	
Initial Responder Capability	Unsatisfactory	
Training, Drills, and Exercises	Marginal	
Facilities and Equipment	Satisfactory	
Offsite Response Interfaces	Satisfactory	
Interfaces with Occupants of DOE-Leased Facilities	Not Rated	

## 4.0 Opportunities for Improvement

The follow-up review conducted by the Independent Oversight team identified several opportunities for improvement. These potential enhancements are not intended to be prescriptive. Rather, they are intended to be reviewed and evaluated by the responsible DOE and contractor line managers and prioritized and modified as appropriate, in accordance with site-specific programmatic and emergency management objectives.

- Improve the utility of the hazards screening document by including content that is consistent with DOE Order 151.1 requirements for hazards surveys.
- Implement interim emergency classification and protective action decision-making guidance related to transportation activities through application of the North American Emergency Response Guide as a response tool.
- Consider implementing an emergency response organization that designates the senior fire protection officer as incident commander for all emergency events and assigns other responders as members of the incident command system.
- Develop a mechanism to ensure that emergency planners are notified in advance by cognizant BWO and MMCIC personnel of significant changes in hazardous materials inventories, processes, and activities at MEMP facilities.
- Develop, document, and implement a consistent approach to determining the identities and quantities of hazardous materials to be analyzed in hazards assessment documents.
- Prepare/revise emergency response procedures to ensure consistency with DOE Order 151.1 requirements and associated guidance, particularly in the areas of classification and categorization, consequence assessment, protective actions, and notifications. Validate emergency response implementing procedures to

ensure that they accurately reflect expectations for performing emergency response actions in the field and are structured in a manner that facilitates easy implementation in a high-stress, time-urgent environment.

- Provide incident commanders with formal procedures and improved training on event categorization/classification and the formulation of protective actions to permit prompt and accurate decision-making during the critical, early stages of event response.
- Provide readily available, site-specific, real-time meteorological information and training to incident commanders to enhance protective action decision-making.
- Revise the record-keeping system so that emergency services personnel can readily track the participation of emergency response personnel in all training and responder-proficiency activities.
- Develop an emergency management assessment strategy that prioritizes areas for review, incorporates specific evaluation criteria, and uses independent assessors who are subject matter experts.
- Develop a planning document that facilitates the design and scheduling of drills and exercises to ensure that all of the response plans and facilities, site personnel, and offsite mutual aid responders are periodically involved in a test of their emergency response capabilities.
- Develop criteria that specify minimum requirements for the format and content of all drill and exercise packages and After Action reports, and which clearly address expectations for capturing, analyzing, and resolving deficiencies identified during drills and exercises, and communicating this information to all emergency response personnel.

## APPENDIX A

### FINDINGS FOR CORRECTIVE ACTION AND FOLLOW-UP

This appendix summarizes the significant findings identified during the Office of Independent Oversight and Performance Assurance follow-up review of the Miamisburg Environmental Management Project emergency management program. The findings identified in this appendix will be formally tracked in accordance with the *Protocols for Responding to Office of Independent Oversight and Performance Assurance*

*Appraisal Reports* (August 1999) and will require a formal corrective action plan. The DOE Office of Environmental Management, Ohio Field Office, DOE-MEMP site office, and BWO need to specifically address these findings in the corrective action plan. Line management should address other weaknesses and/or deficiencies identified in this report, but they need not be included in the formal corrective action plan.

FINDING STATEMENT	REFER TO PAGES:
1. BWO has not established a consistent and technically sound process for developing emergency preparedness hazards assessments and associated consequence analyses for MEMP facilities and activities.	8-9
2. BWO incident commanders lack the necessary plans, procedures, and implementing guidance for, and are not proficient in, assessing initial emergency event conditions and formulating worker and public protective actions and recommendations.	9-11
3. DOE-MEMP has not established a process that requires DOE to be informed before significant changes occur in hazardous material quantities used or stored by lessees of DOE-owned facilities.	15

#### OPEN LEGACY ISSUE

- DOE-MEMP and BWO have not adequately implemented the requirements of the Mound Emergency Plan or the DOE Emergency Management Order. As implemented, the site emergency management program does not provide reasonable assurance that the site can promptly perform accurate accident recognition, categorization/classification, and notifications to offsite agencies and provide protective action recommendations to protect workers, the public, and the environment. Additionally, senior site management has not provided sufficient attention, emphasis, and leadership to this program commensurate with the Secretarial initiative after the explosion at Hanford. This has delayed the necessary improvements to the site emergency management program.
- DOE has not fully developed policy and implementing guidance pertaining to the leasing of space to private companies and public workers at facilities such as MEMP. Additionally, OH authorized leasing of MEMP facilities prior to clearly identifying hazards and controls, fully assessing the potential impact of accidental releases of radioactivity on these lessees, or developing an effective emergency management program involving lessees.




## APPENDIX B

# EVALUATION PROCESS AND TEAM COMPOSITION


The evaluation was conducted according to formal protocols and procedures, including an Appraisal Process Guide, which provides the general procedures used by the Independent Oversight program for conducting inspections and reviews, and the Miamisburg Environmental Management Project Emergency Management Evaluation Plan, which outlines the scope and conduct of the process. The evaluation was conducted under the direction of the Secretary of Energy's Office of Independent Oversight and Performance Assurance. Planning discussions were conducted to ensure that all team members were informed of the review objectives, procedures, and methods.

### Explanation of Rating System


The Office of Independent Oversight and Performance Assurance assigns an overall rating to the emergency management program; ratings are also assigned to selected elements of the program. The rating process involves the critical consideration of all evaluation results, particularly identified strengths and weaknesses. In the case of weaknesses, the importance and impact of those conditions is analyzed both individually and collectively, and balanced against any strengths and mitigating factors to determine their impact on the overall goal of protection of site workers and the public. The Office of Independent Oversight and Performance Assurance uses three rating categories: *Satisfactory*, *Marginal*, and *Unsatisfactory*, which are depicted by colors as Green, Yellow, and Red, respectively.

 **Satisfactory (Green):** An overall rating of *Satisfactory* is assigned when the emergency management program being evaluated provides reasonable assurance that all of the site's emergency responders are ready to respond promptly and effectively to an emergency event or condition.

An emergency management element being evaluated would normally be rated Satisfactory if the emergency management function is effectively implemented. An element would also normally be rated as Satisfactory if, for any applicable standards that are not met, other compensatory factors exist that provide equivalent protection to workers and the public, or the impact is minimal and does not significantly degrade the response.

 **Marginal (Yellow):** An overall rating of *Marginal* is assigned when the emergency management program being evaluated provides questionable assurance that site workers and the public can be protected following an emergency event or condition.

An emergency management element being evaluated would normally be rated Marginal if one or more applicable standards are not met and are only partially compensated for by other measures, and the resulting deficiencies in the emergency management function degrade the ability of the emergency responders to protect site workers and the public.

 **Unsatisfactory (Red):** An overall rating of *Unsatisfactory* is assigned when the emergency management program being evaluated does not provide adequate assurance that site workers and the public can be protected following an emergency event or condition.

An emergency management element being evaluated would normally be rated Unsatisfactory if one or more applicable standards are not met, there are no compensating factors, and the resulting deficiencies in the emergency management function seriously degrade the ability of the emergency responders to protect site workers and the public.

## Team Composition

The team membership, composition, and responsibilities are as follows:

### **Director, Independent Oversight and Performance Assurance**

Glenn Podonsky

### **Deputy Director, Independent Oversight and Performance Assurance**

Mike Kilpatrick

### **Director, Office of Emergency Management Oversight**

Charles Lewis

## Team Leader

Kathy McCarty

## Team Members

David Schultz  
Steve Simonson  
Ed Stafford  
Doug Trout

## Administrative Support

Shirley Cunningham

## Quality Review Board

Mike Kilpatrick  
Charles Lewis  
Dean Hickman  
Tom Davis  
Bob Nelson